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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	10/751,017	SHATDAL, AMBUJ
Office Action Summary	Examiner	Art Unit	
	JEAN B. FLEURANTIN	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/7/05*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This in response to the application filed on 12/31/03, in which claims 1-20 are presented for

examination.

Information Disclosure Statement

2.   The information disclosure statement (IDS) submitted on 03/07/05. The submission is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being

considered by the examiner.

Drawings

3.   The Drawings submitted 12/31/03 are acknowledged.

Formal drawings are required in reply to the Office action.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new
and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4 and 15-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter.

As set forth in MPEP 2106:

Products may be either machines, manufactures, or compositions of matter.
A machine is "a concrete thing, consisting of parts or of certain devices and
combinations of devices." *Burr v. Duryee,* 68 U.S. (1 Wall.) 531, 570 (1863).

As per claim 1,

Claim 1, in view of the above cited MPEP section is not statutory, because "computing

aggregates for groups specified by the first grouping set using the first table and computing aggregates

for groups specified by the second grouping set using the first table" does not produce any useful and

tangible result. And also dependent claims 2-4 are rejected on that basis.

As per claim 15,

Claim 15, in view of the above cited MPEP section is not statutory, because "in processing the query, compute intermediate values for storage in an intermediate spool" does not produce any useful and tangible result. And also dependent claims 16-20 are rejected on that basis.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,713,020 issued to Reiter et al., ("Reiter") in view of applicant background, specification pages 2-4, up to paragraph [0009] ("APA").

As per claim 1, Reiter discloses "a method for use in a database system" (i.e., method for processing database queries; see col. 2, lines 40-41), comprising:

"receiving a query that specifies an aggregate on distinct values of at least one attribute" (i.e., receiving a query producing a multi level aggregation table set; col. 4, lines 34-37), "the query further specifying grouping on plural grouping sets" (i.e., query containing a sum of order amount for all rows (sets); see col. 5, lines 23-25), "the plural grouping sets having at least a first grouping set" (i.e., grouping (aggregating) column; col. 5, lines 30-31) and "a second grouping set" (i.e., grouping (aggregating) rows; col. 5, line 37);

"identifying distinct values of the at least one attribute" (i.e., each distinct value in the designated row; col. 9, lines 15-18) and "computing aggregates for groups specified by the first grouping set using the first table" (i.e., performing some operation on the values of rows in the source table; col. 2, lines 24-

25); and "computing aggregates for groups specified by the second grouping set using the first table" (i.e., aggregating of all of the rows of the source table; see col. 5, lines 36-37).

Reiter fails to explicitly disclose storing the distinct values of the at least one attribute in a first table. However, APA discloses a method for storing the distinct values of the at least one attribute in a first table (see APA page 3, paragraph [0006], line 1).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by storing the distinct values of the at least one attribute in a first table as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 2, Reiter discloses "wherein the grouping set is lower grouping set than the second grouping set" (i.e., higher level aggregation rows (321-323) and lower level aggregation rows (331-333); see col. 5, lines 59-67).

As per claim 3, in addition to claim 1, Reiter further discloses "computing a group-by operation on the first grouping set" (i.e., group-by operation; see table 2, lines 6-7) and "selecting the attributes of the first grouping set for output" (i.e., selecting sum or category; see table 2, lines 1-4).

As per claim 4, in addition to claim 1, Reiter fails to explicitly disclose storing the distinct values of the at least one attribute in a spool (table). However, APA discloses a method for storing the distinct values of the at least one attribute in a spool (table) (see APA page 3, paragraph [0006], lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by storing the distinct values of the at least one attribute in a spool (table) as disclosed by APA (see APA, page 3, paragraph [0006], lines 1-2). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see

Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 5, in addition to claim 1, Reiter fails to explicitly disclose storing the distinct values of the at least one attribute for the groups defined by the second grouping set in a second table. However, APA discloses a method for storing the distinct values of the at least one attribute for the groups defined by the second grouping set in a second table (pool); see APA page 3, paragraph [0006], lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by storing the distinct values of the at least one attribute for the groups defined by the second grouping set in a second table (spool) as disclosed by APA (see APA, page 3, paragraph [0006], lines 1-2). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 6, Reiter discloses "computing aggregates for the groups specified by the second grouping set is based on the second table" (i.e., one (grouping) aggregating columns; see col. 6, lines 64-65 and Fig. 8).

As per claim 7, in addition to claim 1, Reiter further discloses "selecting one or more attributes of the second grouping set for output" (i.e., selecting sum or category; see table 2, lines 1-4).

As per claim 8, Reiter discloses "an article comprising at least one storage medium containing instructions that when executed cause a system to" (i.e., memory comprising an engine, executing (processing instructions) on the cpu as do the programs; see col. 4, lines 22-26 and Fig. 1), comprising:

"receiving a query that specifies an aggregate on distinct values of at least one attribute" (i.e., receiving a query producing a multi level aggregation table set; col. 4, lines 34-37), "the query further specifying grouping on plural grouping sets" (i.e., query containing a sum of order amount for all rows

(sets); see col. 5, lines 23-25), "the plural grouping sets having at least a first grouping set" (i.e., grouping (aggregating) column; col. 5, lines 30-31) and "a second grouping set" (i.e., grouping (aggregating) rows; col. 5, line 37);

"identifying distinct values of the at least one attribute" (i.e., each distinct value in the designated row; col. 9, lines 15-18) and "computing aggregates for groups specified by the first grouping set using the first table" (i.e., performing some operation on the values of rows in the source table; col. 2, lines 24-25); and "computing aggregates for groups specified by the second grouping set using the first table" (i.e., aggregating of all of the rows of the source table; see col. 5, lines 36-37).

Reiter fails to explicitly disclose steps for storing the distinct values of the at least one attribute in a first table. However, APA discloses steps for storing the distinct values of the at least one attribute in a first table (see APA page 3, paragraph [0006], line 1).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Reiter by incorporating steps for storing the distinct values of the at least one attribute in a first table as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 9, Reiter discloses "wherein the grouping set is lower grouping set than the second grouping set" (i.e., higher level aggregation rows (321-323) and lower level aggregation rows (331-333); see col. 5, lines 59-67).

As per claim 10, in addition to claim 1, Reiter further discloses "computing a group-by operation on the first grouping set" (i.e., group-by operation; see table 2, lines 6-7) and "selecting the attributes of the first grouping set for output" (i.e., selecting sum or category; see table 2, lines 1-4).

As per claim 11, in addition to claim 1, Reiter fails to explicitly disclose <u>storing</u> the distinct values of the at least one attribute in a spool (table). However, APA discloses a method for <u>storing</u> the distinct values of the at least one attribute in a spool (table) (see APA page 3, paragraph [0006], lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by <u>storing</u> the distinct values of the at least one attribute in a spool (table) as disclosed by APA (see APA, page 3, paragraph [0006], lines 1-2). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 12, in addition to claim 1, Reiter fails to explicitly disclose <u>storing</u> the distinct values of the at least one attribute for the groups defined by the second grouping set in a second table. However, APA discloses a method for <u>storing</u> the distinct values of the at least one attribute for the groups defined by the second grouping set in a second table (pool); see APA page 3, paragraph [0006], lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by <u>storing</u> the distinct values of the at least one attribute for the groups defined by the second grouping set in a second table (spool) as disclosed by APA (see APA, page 3, paragraph [0006], lines 1-2). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 13, Reiter discloses "computing aggregates for the groups specified by the second grouping set is based on the second table" (i.e., one (grouping) aggregating columns; see col. 6, lines 64-65 and Fig. 8).

As per claim 14, in addition to claim 1, Reiter further discloses "selecting one or more attributes of the second grouping set for output" (i.e., selecting sum or category; see table 2, lines 1-4).

As per claim 15, Reiter discloses "a database system" (see col. 2, lines 53-54) comprising:

"a controller to" (i.e., cpu; see col. 4, line 25):

"receive a query that specifies a calculation of an aggregate on distinct values of an attribute in the table" (i.e., receiving a query producing a multi level aggregation table set; col. 4, lines 34-37), "the query to specify group-by operations on plural grouping sets" (i.e., query using the group-by 'product and category name (sets)'; see col. 5, lines 5-15 and table 2);

"in processing the query" (i.e., executing (processing) query; see col. 7, line16), and

"use the intermediate values in the intermediate spool for computing results of at lest two group-by operations on" (In light the specification at page 5, paragraph [0018], the purpose of use the intermediate spool, which corresponds intermediate table (output table) is disclosed by Reiter col. 5, lines 36-37) "at least two corresponding grouping sets" (i.e., grouping (aggregating) column; col. 5, lines 30-31) and "a second grouping set" (i.e., grouping (aggregating) rows; col. 5, line 37).

Reiter fails to explicitly disclose compute intermediate values for <u>storage in an intermediate spool</u> (table). However, APA discloses a system for computing intermediate values for <u>storage in an intermediate spool</u> (table) (see APA page 3, paragraph [0006]).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Reiter by compute intermediate values for <u>storage in an intermediate spool</u> (table) as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), thereby improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 16, Reiter discloses "wherein the query comprises a Structure Query Language (SQL) SELECT statement containing a GROUP BY clause specifying multiple grouping sets" (i.e., SQL query containing GROUP BY and SELECT statement; see col. 5, lines 5-15 and table 2).

As per claim 17, Reiter discloses "the query specifies group-by operations on plural grouping sets at multiple grouping levels" (i.e., group-by operation and product name level (1) and category name level (2); see table 2, lines 6-7).

As per claim 18, in addition to claim 8, Reiter further discloses "database management software" (i.e., memory comprising an engine and a cpu for executing programs; see col. 4, lines 22-26 and Fig. 1).

As per claim 19, in addition to claim 18, Reiter further discloses "the storage comprises plural storage modules accessible by the plural access modules in parallel" (i.e., database system comprising two components functioning in parallel, database engine for storing and database front-end for sending commands to the engine; see col. 1, lines 63-67).

As per claim 20, Reiter further discloses "the access modules executable on the processors" (i.e., database system comprising two components, database engine for storing, manipulating (processing) and database front-end (processor) for sending commands to the engine; see col. 1, lines 63-67).

Prior Art

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Au, U.S. Patent No. 6,732,096 relates to a join mechanism.

Galindo-Legaria et al., U.S. Patent No. 6,748,393 relates to database system.

CONTACT INFORMATION

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN B. FLEURANTIN whose telephone number is 571 – 272-4035. The examiner can normally be reached on 7:05 to 4:35.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571 – 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jean Bolte Fleurantin

Patent Examiner

Technology Center 2100

June 8, 2006